

University of Alberta

EAS 570: Advanced Climatology Lec-B1 Winter Term, 2018

Instructor: Prof. Andrew Bush
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Office Hours: Anytime! I encourage you to come see me if you have any questions about the course material or about atmospheric/oceanic science in general. Short (but detailed) questions can also be done by email.

Course Website and Lecture Notes: <http://courses.eas.ualberta.ca/eas570>

TA/Marker: TBA

Lecture Room & Time: TBA

Course Description: This course will be interactive with a combination of lectures, discussion, and presentations. An emphasis will be placed on students learning to critically read and assess existing publications and to communicate their thoughts, with an emphasis on the global climate system in its current and possible future state.

Course Prerequisites: There are no required prerequisites.

Course Objectives and Expected Learning Outcomes:

This course will start with an overview of the present climate system including its components, their interactions, and the processes that drive the general circulation that we observe today. We will review basic radiation laws, atmospheric dynamics, and contemporary climate issues.

We will examine oscillations in the climate system such as: fast timescale baroclinic instability; Rossby and Kelvin waves; the quasi-biennial oscillation; the Pacific Decadal oscillation; the North Atlantic oscillation; the Arctic and Antarctic oscillation; and interannual, centennial, and millennial climate variability. We will review some of the statistical techniques that are currently in use to identify contemporary climate variability (such as Empirical Orthogonal Functions, Canonical Correlation Analysis, etc.).

Climate impacts on ice sheets, alpine glaciers, and global hydrology will also be discussed.

Lecture Schedule: The weekly lecture schedule will be determined once everyone's schedule is known.

Required Textbook: There is no required textbook.

Recommended or Optional Learning Resources: A list of related textbooks may be found on the course website home page. They are all in the library.

Past (or Representative) Evaluative Material: A number of in class problems will cover past assignment and exam questions.

Grade Evaluation:

Paper Evaluation (3):	45%
Term paper presentation:	15%
Term paper	40%

All assignments and examinations in this course will be given a numerical score. A cumulative course mark will be calculated from those scores, weighted as tabulated above. A final letter grade will be assigned based upon your cumulative mark and my analysis of the class's cumulative mark distribution. Where possible, natural breaks in the cumulative mark distribution will be used in assigning grades, but no pre-determined distribution of grades will be imposed on the class. Your grade will reflect a combination of your absolute achievement and relative standing in the class.

<u>EXAMS/ASSIGNMENTS</u>	<u>WEIGHTING</u>	<u>DATE</u>
Assignment #1	15%	TBA (second week of Feb.)
Assignment #2	15%	TBA (second week of Mar.)
Assignment #3	15%	TBA (first week of April)
Term paper and presentation	55%	TBA (second week of April)

NOTE 1: Grades are unofficial until approved by the Department and/or Faculty offering the course.

Format of Exams and Assignments: There are no exams in this course. The assignments will be seminar-style presentations in which the students will present their critique of an existing publication relevant to the course and to their own research area. Papers will be assigned in consultation with the instructor. A short presentation to the class will be a component of each assignment. The final term paper will be due on April 4 and student presentations of their paper will take place during the last week of classes.

Missed Term Exams and Assignments: For an excused absence where the cause is religious belief, a student must contact the instructor(s) within two weeks of the start of

Fall or Winter classes to request accommodation for the term (including the final exam, where relevant). Instructors may request adequate documentation to substantiate the student request.

A student who cannot write a term examination or complete a term assignment due to incapacitating illness, severe domestic affliction or other compelling reasons can request from the instructor a deferral of the weight of the missed term work to the final term paper. In all cases, instructors may request adequate documentation to substantiate the reason for the absence at their discretion.

Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of Facts to gain a deferral is a serious breach of the *Code of Student Behaviour*.

Deferred Final Examination:

There is no final exam in this course.

Reexamination of Final Exam:

There is no final exam in this course.

STUDENT RESPONSIBILITIES:

ACADEMIC INTEGRITY: "The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University."

All forms of dishonesty are unacceptable at the University. Any offence will be reported to the Associate Dean of Science who will determine the disciplinary action to be taken. Cheating, plagiarism and misrepresentation of facts are serious offences. Anyone who engages in these practices will receive at minimum a grade of zero for the exam or paper in question and no opportunity will be given to replace the grade or redistribute the weights. As well, in the Faculty of Science the sanction for **cheating** on any examination will include a **disciplinary failing grade** (NO EXCEPTIONS) and senior students should expect a period of suspension or expulsion from the University of Alberta

EXAMS: Your student photo I.D. is required at exams to verify your identity. Students will not be allowed to begin an examination after it has been in progress for 30 minutes. Students must remain in the exam room until at least 30 minutes has elapsed. Electronic equipment cannot be brought into examination rooms.

CELL PHONES: Cell phones are to be turned off during lectures, labs, seminars, and exams.

STUDENTS ELIGIBLE FOR ACCESSIBILITY-RELATED

ACCOMMODATIONS (students registered with Specialized Support & Disability Services - SSDS): Eligible students have both rights and responsibilities with regard to accessibility-related accommodations. Consequently, scheduling exam accommodations in accordance with SSDS deadlines and procedures is essential. Please note adherence to procedures and deadlines is required for U of A to provide accommodations. Contact SSDS (www.ssd.ualberta.ca) for further information.

STUDENT SUCCESS CENTRE: Students who require additional help in developing strategies for better time management, study skills or examination skills should contact the Student Success Centre (2-300 Students' Union Building).

Policy about course outlines can be found in §[23.4\(2\)](#) of the University Calendar.

RECORDING AND/OR DISTRIBUTION OF COURSE MATERIALS: Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Disclaimer: Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.

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